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Spring 1969

OUR PUBLIC LANDS

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Keeping Wild Lands Wild

Page 12



U.S. DEPARTMENT OF THE INTERIOR
Walter J. Hickel, Secretary

BUREAU OF LAND MANAGEMENT
Boyd L. Rasmussen, Director

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

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Ed Parker, Editor

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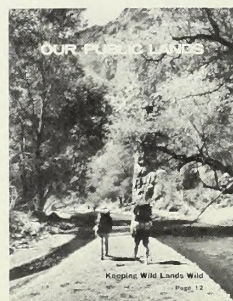
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Photo by
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Secretary Hickel Comes to Interior

One of Secretary Walter J. Hickel's first acts after having been sworn in as the new Secretary of the Interior January 25 was to visit various offices within the Department. On one of his visits he stopped by the Bureau of Land Management to meet Director Boyd L. Rasmussen and his staff. The former Alaska Governor has worked with BLM before, since Alaska is a State with a high percentage of Federal land ownership.

Secretary Hickel was born in Claffin, Kans., in 1919, the son of Robert A. and Emma Hickel, and the third of their 10 children. His parents were tenant

farmers on the flatlands of the North Bend area. He attended grade school and high school in Claffin, participating in football, track, and boxing. In 1938 he won the Kansas Golden Gloves Welterweight Championship. At the age of 19 he bought a Claffin insurance business which he sold in 1940.

Secretary Hickel is married to Ermalee Strutz, the daughter of pioneer Alaskans, Mr. and Mrs. Louis P. Strutz of Anchorage, and has six sons.

Secretary Hickel has been a builder, developer, and civic leader since 1946. He started his business career by building homes. Later he built, operated, and developed rental units, residential areas, and hotels in Alaska.

He served as Chairman of the State Chamber of Commerce's Economic Development Committee, Chairman of the Board of Anchorage Natural Gas Company, a trustee of the Alaska Methodist University, and a member of the Board of Regents of Gonzaga University. He was a leader in the fight for statehood and was elected Governor of Alaska in 1966.

New Public Land Recreation Rules Issued

The Bureau of Land Management has issued basic regulations covering recreation activities on 450 million acres of public lands. Major topics of the regulations include sports events, general recreation management policies, rules of conduct, preservation of natural values, scenic corridors, wild and scenic rivers, motor trails, and specific rules for developed campgrounds and similar facilities.

The new rules are necessary to accommodate growing recreation demands on public lands, to give guidelines for long-term management of primary uses, and to set procedures for handling new forms of outdoor recreation such as cross-country races and sportscar rallies (see "Desert Rallies," this issue).

Johnny Horizon Float

Johnny Horizon's "Keep it Clean" message was seen and heard throughout the land last New Year's Day. The occasion was the annual Tournament of Roses Parade in Pasadena, Calif., in which a Johnny Horizon float passed in review before thousands of spectators and millions of television viewers. The float was sponsored by the city of Altadena in cooperation with BLM.

Interior Rejects Bids Submitted in Oil Shale Test Lease Sale

The Department of the Interior has rejected as inadequate three bids received in a test sale of oil shale leases held at Denver in December 1968.

Three public land tracts in the shale-rich Piceance Creek Basin of Rio Blanco County, Colo., were offered in the lease sale. In addition to an established royalty and annual rental rate, bidders were asked to submit bonus bids for the leases.

The Oil Shale Corporation (TOSCO) of New York was the high bidder on Tract 1, offering \$249,000. One other bid—\$625—was received on this tract. Tract 2 attracted only one bid—\$250,000—also from TOSCO. There were no bids on Tract 3.

Centennial of Historic Voyage

One of the great adventures in history began on a spring day 100 years ago when Maj. John Wesley Powell and nine companions set off on their pioneer exploration of the Green and Colorado Rivers in Wyoming, Utah, and Arizona.

The historic voyage, which Powell was to repeat 2 years later, began at Green River, Wyo., and ended in

Arizona 3 months and 6 days later at the mouth of the Grand Canyon. The two voyages gave the Nation the first definite information about the rivers and the rugged land they traverse, and "filled in" the last major blank space on the map of the United States.

In honor of the achievement, 1969 has been designated as "John Wesley Powell Centennial Year," and many Federal, State, and organizational activities are planned. These include a reenactment of the voyage, an anniversary ceremony May 24 at Green River, a movie, and a number of publications. Interior's Bureau of Reclamation has produced a special color issue of its quarterly magazine, "Reclamation Era." It contains 24 pages and more than 40 photographs, and can be purchased for 45 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Mining Claims on Oil Shale Lands Convey no Automatic Rights

The Department of the Interior's chief legal officer has ruled that recent mining claims on oil shale lands, even if assumed to be valid, do not convey rights to any minerals if they cannot be mined without disturbing oil shale or any other leasable minerals.

In a recent memorandum the Solicitor pointed out that the Multiple Mineral Development Act of 1954 permits no development of locatable minerals "which cannot be mined without extracting or disturbing the leasable minerals."

Thus the existence of claims, even if subsequently determined to be valid, need not interfere with the leasing of lands for oil shale development.

Train Sworn in as Under Secretary

Russell E. Train, former president of the Conservation Foundation, was sworn in as Under Secretary of the Interior in ceremonies in Secretary Hickel's office in February.

Born in Washington, D.C., in 1920, Train has served in all three branches of the Federal Government—executive, legislative, and judicial. He began as an attorney for the Joint Congressional Committee on Internal Revenue Taxation in 1947, and from 1953 to 1956 he served as Clerk and then Minority Advisor to the House Ways and Means Committee. In 1956 he became head of the Treasury Department's legal staff, and in 1957 was appointed to the Tax Court of the United States. He resigned in 1965 to become president of the Conservation Foundation, a nonprofit research, education and information organization concerned with a broad range of environmental matters.

***Rugged new sport
on the public lands***



DESERT RALLIES

H EAT, DUST, sand, rocks, dry washes, and tire-puncturing plants all combined this last spring to challenge the 243 race drivers and their 233 copilots who started in one or both of two grueling cross-country races held on the Nevada desert near Las Vegas.

In the two races, four out of every five entries were unable to finish. Parnelli Jones, winner of the 1965 Indianapolis 500, was forced to retire from the first race when his vehicle was disabled by the rugged terrain. Half of the entries of both races were out of the running before they reached the 100 mile marker.

The two races, the Mint-400 and the Stardust 7-11, were the outgrowth of the rapidly growing interest in off-road vehicles for recreational use. The Mint-400, sponsored by the Mint Hotel in Las Vegas, drew 101 entries. The success of this first race prompted the Stardust Hotel to cosponsor the second race in cooperation with the National Off-Road Racing Association. It drew 142 entries.

Although the race course crossed some private land, the major portion was across public lands administered by the Bureau of Land Management. The establishment of a course that would meet the requirements of both the sponsors and the Bureau of Land Management re-

quired careful planning. Racing enthusiasts from the Las Vegas community donated many hours to mark the course.

While recognizing this new trend in recreation as a legitimate use of public lands, BLM wanted to assure the protection of the public lands, especially management areas such as Red Rock Canyon Recreation Lands, 15 miles west of Las Vegas. BLM also wanted to safeguard the interests of grazing permittees and other users of the public lands, and to give the greatest possible protection to the basic desert ecology. Wherever possible the course was restricted to existing roads, trails, dry washes, and sand dunes. BLM received excellent cooperation from the sponsors of both races. The sponsors obtained releases from private landowners involved, and all public land users likely to be affected were notified well in advance of the two races.

BLM issued Special Land Use Permits to authorize the races across public lands. The permits contained stipulations intended to guard against abuse of public lands and included a \$10,000 surety bond to cover damages that might result. A complete ground check of the course, made before and after the races, gave the Bureau a reliable reference for assessing damage.

Very little damage was caused by the races. Generally, all vehicles followed the single tracks of the course, and a well-defined course now exists. Most of the tracks made off the course resulted from drivers losing their way during the night. These were generally isolated cases.

By **ARTHUR E. TOWER**

Natural Resources Manager
BLM District Office, Las Vegas, Nev.



Lineup in Casino Center for a parade to the edge of town and the official start.

BLM officials met with all drivers just before each race to explain the resource values involved and to stress the possibilities of damage. Drivers were urged to stay on the designated course. BLM officials believed that this last minute briefing played an important part in keeping damage to a minimum.

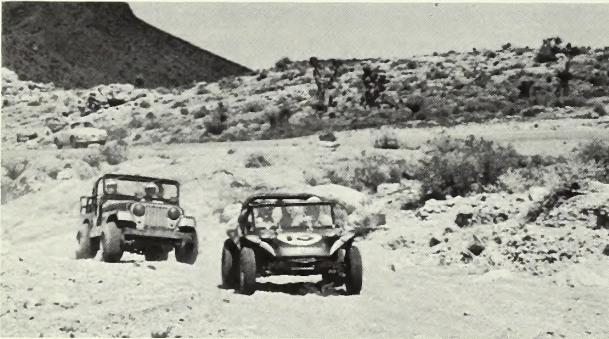
Orange ribbons, flags, and arrows made of reflective tape were posted at key points to mark the course for both day and night driving. An arrow pointing up indicated the trail was clear ahead and that speed could be maintained. Pointing down, it meant a road hazard immediately ahead. Pointing right or left it indicated a turn.

Four outlying check points and fuel stops were established at the desert communities of Stateline, Ash Meadows, Beatty, and Goodsprings, Nev. In addition to the specified check points, there were several check points whose locations were not known by the drivers. These were to assure that contestants were following the proper route, and they were subject to being moved at random during the race. Drivers who failed to have their cards punched at all check points were disqualified.

The success of the Mint-400, the publicity, the obvious challenge to both men and machines, and the participation of a top racing driver like Parnelli Jones created even more interest in the second race, the Stardust 7-11. The Mint-400 covered a 400 mile course; the Stardust 7-11 required two laps over a slightly modified version of the same course to cover a total of 700 miles.

Television star Dick Smothers was Grand Marshal for the second race. Among the entries were actors Steve McQueen and James Garner, and Mel Larson, Indianapolis 500 contestant.

A story told by J. N. Roberts, rider of a Husqvarna motorcycle and the first man to cross the finish line in



Photos by Las Vegas News Bureau

Cross Country Winners

Entries in the Mint-400 Cross Country Race were divided into five classes. The Stardust 7-11 added three additional classes for a total of eight. In the tables below, class numbers for the Mint-400 have been changed to conform to corresponding classifications in the Stardust 7-11.

MINT-400

Class		Winning driver and Co pilot	Equipment	Time
III	Production two-wheel drive dune buggies.	Eugene Hurst Al Haltz	VW buggy	16:01
V	Production four-wheel drive vehicles.	Jim Loomis Larry Minor	Ford Bronco	16:36
VI	Modified or non-production four-wheel drive vehicles.	No finishers		
VII	Motorcycles up to 250 cc.	J. N. Roberts Gunnar Lindstrum	Husqvarna	12:30
VIII	Motorcycles over 250 cc.	Larry Bernquist Gary Preston	Honda	13:09

STARDUST 7-11

I	Production two-wheel drive passenger cars.	No finishers		
II	Production two-wheel drive utility vehicles.	No finishers		
III	Production two-wheel drive dune buggies.	Charles Onchade Don Richards	VW Burro	30:11
IV	Modified or nonproduction two-wheel drive vehicles of all types.	Malcolm Smith Frankie Freeman	VW Myers Manx	31:55
V	Production four-wheel drive vehicles.	Larry Minor Jack Bayer	Ford Bronco	27:17
VI	Modified or nonproduction four-wheel drive vehicles.	Monte Carlton James R. Bennewitz	Chevy V8 Jeep	36:10
VII	Motorcycles up to 250 cc.	Gary Conrad Russ Darnell	Husqvarna	26:13
VIII	Motorcycles over 250 cc.	Larry Bernquist Gary Preston	Honda	22:05

The Mint-400, gives hair-raising evidence of the skill and daring required to compete in these desert races. He recalls, "I was traveling along at about 75 miles an hour when I noticed a deep gully ahead. I hit the binders (brakes) right away, locking the rear wheel which stalled my engine and put out the light. I hit the gully in pitch darkness. That was a bad moment.

After flying through the air, I landed on my rear wheel and the engine came back giving me my headlight . . . with luck I managed to keep upright and to escape damage that would have prevented me from finishing the race."

Both races are being repeated this spring and seem destined to become annual affairs. But their significance goes far beyond the Las Vegas community or even beyond their impact on those interested in cross-country racing. They are symbolic of the growing interest in outdoor recreation and of the variety of new demands being made on public lands. It seems certain that within the next decade public land managers will be called upon to accommodate many new forms of outdoor activities, some of which may even involve equipment now unknown.

Today the Nation's remaining open space is itself a resource whose value is being recognized by a growing segment of the population. The demands being made on this open space are already great and will increase in the years ahead. Only through careful planning and multi-use management can the resource be stretched to provide all the goals and services a growing population will need. □



RENO REVISITED

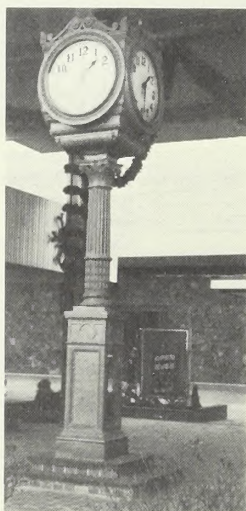
The point of view makes a difference



Changing land use.



Flood control revetments.



Still a public asset.



The old and the new—First Methodist Church, 1925; apartment building, 1966.

THE RECENT PUBLICATION of the Bureau of Land Management's first technical bulletin, "Where Not to Build—A Guide to Open Space Planning," reminded me of two walks I took in Reno, Nev.

The first took place on a Sunday morning in March 1965 between sessions of an Urban and Rural Planning Conference being held by the Bureau. As I walked through the hotel lobby carrying my camera, I ran into a fellow conferee, Sam Zisman, also with camera. We joined forces. Sam, who later would coauthor "Where Not to Build," was out to photograph points and objects of interest to him in the pursuit of his profession as a planning consultant and professor of architecture.

While we walked along the city streets, Sam explained to me what he was looking for. As I understand it now, he was looking for those objects and points of interest in downtown Reno, both manmade and natural, which should be taken into consideration in the renewal and further development of that part of the city. He was looking specifically at "where not to build" and "what not to destroy."

As we walked and talked, looked and discussed, I began to realize that there were many attractions and places which I had hurriedly passed by a number of times without noticing.

For example, high on its curbside pedestal was a four-sided street clock for which any antique collector would pay a good price. At another place was an old building housing a casino. Covered by the casino's gaudy sign was a charming facade which, if freed from the sign and refurbished with taste, would make the building an attractive landmark instead of a garish billboard. In another spot was a little alleyway between buildings, so well treated esthetically that it tended to lure people toward the casinos which owned it. These were all in the very busy casino section.

By IRVING SENZEL

BLM Assistant Director, Legislation and Plans
Washington, D.C.

In a quieter part of the area, across from my hotel, was an old public building fronting on an open plaza of green grass. Paths crisscrossed the plaza and, if I recall correctly, a statue stood in its middle. The full charm of this green oasis was somewhat diminished by the battered trash receptacles within it, and by advertising benches, utility poles, and street signs around it. Sam looked at it a moment, then explained to me a number of ways its beauty could be enhanced.

A hilly area, apparently one of the fine residential sections of bygone times, rose behind the hotel. There we saw old homes harmoniously at rest at the top of the hill; in contrast, a new and fairly tall office building reared uncomfortably at the bottom. And along the nearby Truckee River we noticed that Wingfield Park, although a lovely spot, was marred a bit by bulky concrete flood control revetments.

These were among the things that I saw for the first time that Sunday morning. I had been sightseeing in any other urban areas, but this was the first time that I had really looked at an urban setting from a land-use point of view. The changed point of view made a world of difference in what I saw.

Reno Revisited

My second walk in Reno took place in the same area of the city on Wednesday afternoon in April 1968 while BLM's National Advisory Board Council was in executive session. I went to look at some of the places I had seen with Sam. The clock was gone from the curbside, and I thought it a real loss, for on my first walk Sam had developed, on the spot, an imaginative plan for its architectural treatment.

The old public building was also gone, and in its place stood a new geodesic structured auditorium, much different from the old building but, I thought, attractive. The grass was gone too, having given way to concrete. The paving, however, had been executed in an attractive manner, at least to my eyes. Even so, all of our ideas for enhancing the beauty of that island of green had disappeared along with the grass. Across the street, the hotel from which I started my first walk was still there but closed. Nearby, new commercial buildings were grading the old residential area.

Signs of change were all around; however, I do not want to suggest that I felt then, or now, that the changes were for the worst. I have no solid basis for judging that, as urban planning is not my profession. Certainly some assets were being lost; undoubtedly some were being gained. I did wonder, though, as I noted these changes, whether the planners and developers were really looking to see "where not to build" and "what not to destroy" as they pursued their plans. Apparently, some were. I found out later that the curbside clock had been purchased by the developers of the Park Lane Shopping Center where it continues to be a public asset.

We are today more and more worrying and fretting about the quality of our environment, particularly in our urban areas. We can gain a better appreciation of the nature of our environmental problems and the extent of our opportunities if we learn what to look for. A good way to do this, I have found, is to take a "nature" hike in the city with a trained urban "naturalist." □

WHERE NOT TO BUILD

The Classification and Multiple Use Act of 1964 involves the public lands directly in urban and urban area planning. It directs the Secretary of the Interior to determine which public lands shall be sold because they are required for the orderly growth and development of a community, or for other development purposes. The sale of public lands for these purposes is authorized by the Public Land Sale Act of 1964, provided that zoning regulations are in effect.

The C&MU Act further directs the Secretary to determine which lands shall be retained and managed, at least for the time being, for other purposes, including outdoor recreation, watershed protection, and wilderness preservation—all of which are integrally involved with open space planning and in overall regional and State planning.

Thus, the Bureau of Land Management, faced with the impact of urbanization on public lands, and responsible for administering these lands in the public interest, commissioned the University of Utah to prepare a guide for open space planning. "Where Not to Build," by Sam B. Zisman, Delbert B. Ward, and Catherine H. Powell, is available at \$1 a copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

OIL BOOM AT BELL CREEK

New oilfield creates a new town

AN AREA of rolling rangelands in southeastern Montana has undergone some dramatic changes within the last 2 years. Local ranchers, plus hunters during the season, were once the only persons to be seen in this remote land, but it's not that way today. Scores of oilfield workers are now turning Bell Creek into the largest producing oilfield in the Rocky Mountain States.

By **GENE NEWELL**
Land Office Manager
BLM State Office, Billings, Mont.

Approximately 350 producing wells have been drilled, a \$2.5 million gas plant has been constructed, and Montana's first "planned" city is growing at a record-setting pace. Oil reserves are estimated at 1 billion barrels.

The heavy activity at Bell Creek began on June 4, 1967, when Denver-based wildcatter Sam Gary, in cooperation with Exeter Drilling Co. and Consolidated Oil and Gas, brought in the 800-barrel-a-day discovery well. Behind Gary was a series of 34 consecutive dry holes drilled in southeastern Montana over a period of 5 years. Discovery was seventh in the final series of eight wells Gary and his associates planned to drill.

Land Office Swamped

Many of the wells at Bell Creek, including Discovery, are on federally-owned public lands. And since the Muddy Sands formation, source of the Bell Creek oil, extends south into Wyoming and well north into



A new town grows to the rhythm of oil pumps.

Montana, oil leasing activity in eastern Montana has increased by more than 500 percent since Bell Creek boomed. The increase in applications for Federal leases swamped the Montana Land Office of the Bureau of Land Management, the agency that handles all Federal oil and gas leasing.

One of the main reasons so many oil companies were attracted to Bell Creek is the relatively small investment required to get into production. A well can be drilled into the Muddy Sands at depths of 4,300 to 4,500 feet in 4 or 5 days at a cost of \$15 to \$20 thousand. Surface developments to move the oil might run another \$30,000 for a total investment of \$50,000 per well. Wells in other Rocky Mountain areas can cost as much as \$1 million or more each to develop. The Bell Creek wells are limited by the Montana Oil and Gas Commission to a 300 barrel per day, per well pumping

capacity, but this production pays for the well in about 60 days. Bell Creek is expected to eventually pump about 80,000 barrels of oil a day.

One problem at Bell Creek has been a lack of transportation for the oil being produced. The field has been pumping at about half its capacity pending construction of pipelines necessary to move the oil to refineries.

Natural Gas Processed

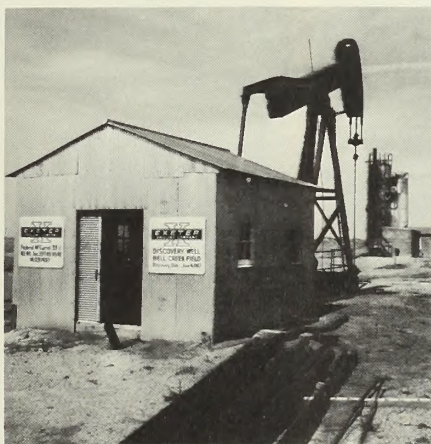
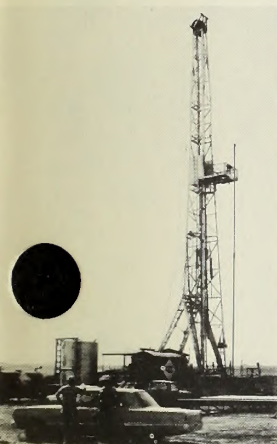
Another problem at Bell Creek has been the total loss of hundreds of millions of cubic feet of natural gas. Between the opening of the field and the fall of 1968, natural gas was flared off at the wells. The \$2.5 million gas plant constructed by Gary now gathers this gas through an estimated 46 miles of pipelines, and processes about 20 million cubic feet of natural gas a day to produce liquid propane, naphtha, and other by-products. Revenues from gas produced on Federal leases

Model Community

The houses are priced in the low \$20,000 range, with all utility lines underground, including a community television cable. Plans include walkways designed so children will not have to cross streets to get to school, a play park for preschoolers, and a community center. Buildings for shops, stores, offices, and warehouses are being planned. The town also includes permanent sites for 37 mobile homes and 26 others are in a temporary park.

When planning for the new town began, a survey showed that a school was needed for some 40 elementary school students. By the time school started, there were 90 students and an addition to the new school had to be rushed to completion.

Several ranchers in the Bell Creek area have become rich beyond their wildest dreams. Although some of the area was under lease years ago, most of these leases



Discovery, the well that started it all.

go to the Federal treasury with a substantial share returned to the State and county for schools and roads.

The remoteness of the Bell Creek field created its own unique problems for the oil workers. The field lies between Broadus, Mont., and Gillette, Wyo., with oil men commuting from both towns. The population of Broadus has doubled from 700, and housing and office space are practically nonexistent.

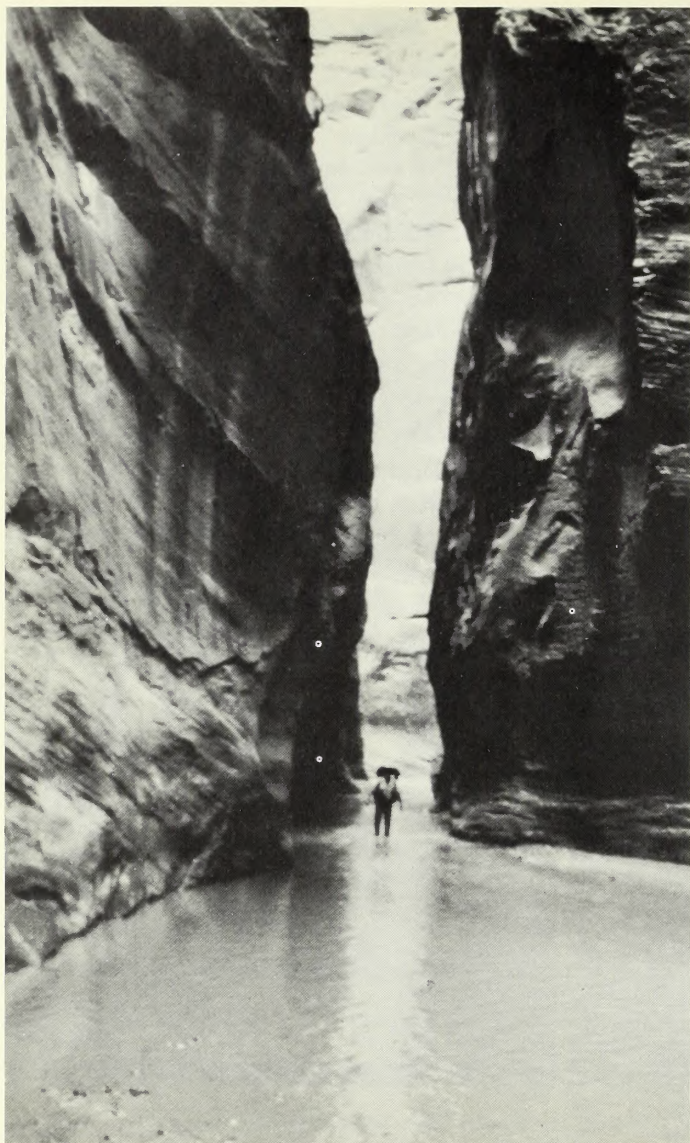
The solution to the housing problem is fast becoming Montana's first planned community, a unique departure from the way boomtowns of the past sprouted and sprawled at random.

The new town of Bell Creek, as envisioned by Sam Gary, is being built by John Scott, builder of custom homes in Denver, who teamed up with Denver architect C. Cabell Childress. There is speculation that the town may eventually grow to 5,000 people.

were allowed to expire because of the lack of oil activity. The opening of Bell Creek brought on leasing activity that bordered on frenzy. Most of the ranchers retained mineral rights to their lands and, as the mineral owners, receive a one-eighth royalty on production. At present prices, this amounts to about \$100 a day per well, and some of the ranchers have up to 15 wells on their land.

Montana Oil and Gas Commission geologists estimate that the average Bell Creek well will produce about 100,000 barrels a year for 5 years, and about the same amount over the next 25 years through secondary recovery methods.

With a life expectancy of 25 to 30 years, the Bell Creek field will continue to have great impact on the economy of a region where formerly an agricultural economy had long been somewhat less than stable. □



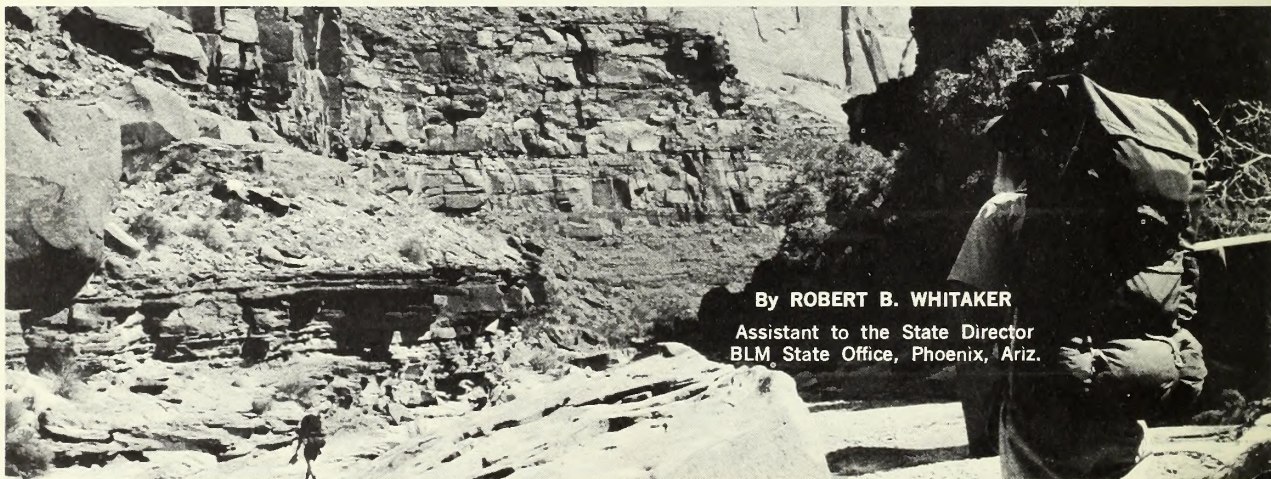
The Narrows—only 12 feet wide in places.

KEEPING WILD LANDS WILD

BLM's first primitive areas



Paria Canyon's 200-foot high arch.



By **ROBERT B. WHITAKER**
Assistant to the State Director
BLM, State Office, Phoenix, Ariz.

A CANYON 500 feet deep and only 12 feet wide in places . . . the legendary birthplace of the "Apache Kid" . . . towering Vermillion Cliffs. . . . These spectacles of the American outdoors are parts of three outstanding areas in Arizona and Utah recently given special protection by the Bureau of Land Management. In a three-part land classification action, BLM designated Paria Canyon in northern Arizona and southern Utah and Aravaipa Canyon in central Arizona as Primitive Areas. The action also established the Vermillion Cliffs Natural Area along the south face of the Paria Plateau.

Paria Canyon

Paria Canyon is a narrow gorge cut deeply into brilliant red-rock formations by the Paria River. It begins in Utah some 10 miles north of the Arizona State line and below the border extends in a southwesterly direction about 45 miles through the Arizona Strip country to Lees Ferry on the Colorado River. The headwaters of the Paria River are in high-mountain country near Bryce Canyon National Park.

Few people have ever seen spectacular Paria Canyon. Recreationists generally have been unaware of its existence, and mining and grazing have been of minor importance.

As an example of its remoteness, a remarkable 200-foot high natural arch remained unrecorded until only 90 years ago. It was sighted from a private plane during a photo reconnaissance of Wrather Canyon—a boxed-up tributary of the Paria.

Another geologic phenomenon is the Narrows, a corset-tight slot through a 6-mile length of Paria Canyon. The walls through the Narrows tower over 500 feet and are less than 12 feet wide in places. Hikers are warned to check weather and water runoff reports before venturing through the sheer-walled Narrows, because there are no side canyon escape routes in case of a flash flood such as those described in "I'll Never Forget Chocolate Drop," this issue.

Paria Creek runs slightly turbid most of the year over a sandy bottom. The soft sand banks and constant criss-crossing of the stream make hiking slow. Horseback riding can be hazardous due to occasional patches of soupy sand. Below the Narrows, Paria Canyon widens with some excellent "tables" for camping.

The canyon was first used by Mormon settlers. Evidence exists of pioneers following the creek from atop the Paria Plateau in the Arizona Strip to the excellent Lees Ferry river crossing. The route also was used by Navajo Indians migrating to the South.

A management plan for the 27,500 acre Paria Canyon Primitive Area will follow soon, and will be oriented around the canyon's wilderness characteristics. Development

will be limited to trail signs, spring water development for hikers, and warning signs at the Narrows and at dangerous sand areas.

Aravaipa Canyon

Aravaipa Canyon is about 22 miles southeast of Winkelman in central Arizona. The canyon once was a hiding place for Apache warriors escaping Army troopers, and reputedly is the birthplace of the "Apache Kid"—last of the renegade Apaches.

The most scenic part of Aravaipa Canyon is a 7-mile stretch between colorful walls that is home to mountain lion, deer, javelina, and other wildlife. The Primitive Area classification includes 5,657 acres.

Aravaipa Creek is a rare example of a perennial, flowing stream in desert terrain. Temperatures often soar well above 100 degrees in midsummer, yet the stream continues to flow a strong current.

The canyon features one of the most complete populations of desert birdlife to be found in Arizona. This is due to the wilderness aspects of the canyon, plus the ever-available water supply.

Aravaipa is ideal for exploring by backpack or horseback. Remnants of Indian ruins can be found, and midway through the 7-mile Primitive Area a grassy opening affords an ideal campsite. The foundation of a pioneer rock house which dates back to the 1880's is located here.

Lower Aravaipa valley was settled during the Civil War era. In 1871, a vigilante force of white settlers struck at dawn to massacre some 85 Apache men, women, and children who were believed responsible for cattle raids and killings. It is doubtful, however, according to subsequent investigation, that the Indians were guilty.

Vermillion Cliffs

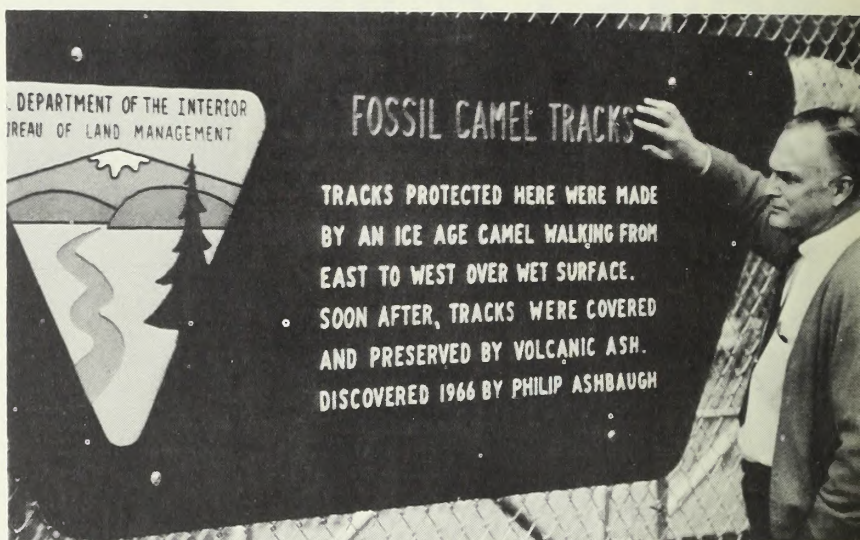
The Vermillion Cliffs form the southern face of Paria Plateau. These beautiful bluffs extend southwesterly along Highway 89A for approximately 30 miles and present a gorgeous view for travelers. The abutment rises 1,000 feet above the flat desert floor and changes color continuously as the sun moves across the sky.

An old Mormon trail followed along the base of these majestic cliffs. This route was heavily used during pioneer days, and wagon tracks can still be seen.

Vermillion Cliffs Natural Area takes in 50,495 acres from the top of the cliff face to the highway. It extends from Navajo Bridge to House Rock.

With a westward surge in population already taking place and a year 2000 prediction of 350 million Americans, future generations will look back with pride on the foresight of the 1960's in protecting such areas of wild, natural splendor. □

THE CAMEL TOOK A WALK...



THE SANTA FE area of New Mexico must have been a pretty lively place for a camel during the Ice Age.

Some of the nearby hills visible today were still building, volcanoes were puffing clouds of steam and cinders, and it rained a lot.

And so one day, or maybe one dark and rainy night, a Pleistocene camel—a big fellow judging from his 9-inch tracks—took a walk from east to west. He walked on wet volcanic ash—tuna-colored tufa—which now lies beneath Turquoise Hill 2 miles west of the Santa Fe Municipal Airport.

Today that tufa is about 1½-inches thick and looks like two slices of bread with a very thin filling of peanut butter—a gigantic sandwich. The tufa must have been about the same thickness when the camel walked on it. Several feet of black volcanic cinders fell soon afterward and preserved his tracks perfectly. Over the years the cinders also cushioned the tracks from the weight of other layers of earth and rock which were deposited later. We see them today in the side of the hill as a 3-foot layer of black cinders on the bottom, then the tufa

sandwich, another and thicker layer of black cinders, and then several feet of ordinary earth and rock on top.

During the Ice Age

When the camel took his walk nobody really knew. Dr. James S. Findley of the University of New Mexico says he was a Pleistocene camel and that he lived during the Ice Age. That could have been any time between 7,000 and 500,000 years ago! Also living then were giant ground sloths, mammoths, and very large bison. All are extinct now.

We can only guess as to why the camel took his walk—maybe to find a drink. The Rio Grande might or might not have been where it is today, 12 miles to the west. He might also have been looking for his family, since camels are herd animals.

The tracks were discovered in 1966 by Philip Ashbaugh of Santa Fe who was mining cinders for General Pumice Corporation. The discovery was reported to the Museum of New Mexico which in turn contacted Dr. Findley of the University of New Mexico's Biology Department.

To Dr. Findley's knowledge, the Museum later reported, no other such instance of fossilized camel tracks ever has been recorded in scientific literature. These tracks also are the first Pleistocene fossil of any kind to be reported in the Santa Fe area.

The lands on which the tracks were found were

By **DOYLE KLINE**

Assistant to the State Director
BLM State Office, Santa Fe, N. Mex.

and nature recorded it



Photos by J. V. Young



part of a 15-year old mining claim under the jurisdiction of the Bureau of Land Management. The owners of the claim, Empire Block Company, took pains to preserve their rare discovery. Later they turned back enough of the claim to permit BLM to build a protective chain-link fence and galvanized roof over about 100 feet of the tracks. BLM sprayed the tracks with a preservative to shield them from moisture. The Museum obtained a specimen track and plans to display it at the Palace of the Governors, the oldest public building in the United States, located on Santa Fe's historic plaza.

How to Get There

If you should visit Santa Fe and wish to see the tracks, drive west on the airport highway until it forks with a gravel road. Keep right on the graveled road past the sewage plant until the road forks again. Bear left past an apple orchard, which will be on your right. Immediately after you pass the end of the orchard fence, you will cross an arroyo. Immediately after you cross the arroyo, a graveled road will fork sharply to the right. Follow this road to the right through a gate (please close it to prevent livestock from straying) and a short distance up the hill. On your left you will see the galvanized "dog run" sheltering the tracks. Please do not attempt to remove cinders or rock. The United States Antiquities Act does not allow this. □



The author and a portion of the preserved camel tracks. Water in the tracks was blown in during a rainstorm.



QUAIL GUZZLERS

Drinking fountains in the desert

“PERMISSION GRANTED to State of California to install quail watering device” read the entry on the Land Office record book, and it was dated less than a month before. This one hasn’t been built yet, I thought, and I’d like to see how it’s done. I called Mr. Norval (Jeff) Jeffries, California Department of Fish and Game, stationed at Yucca Valley. “That’s right,” he said, “we’ve got a spot picked out up northeast of Lucerne Valley, and we’ll be building the ‘guzzler’ in a few weeks. I’ll let you know.”

Sometime later I got a call from Jeff. “Tomorrow,” he said, “come on out.”

Early the next morning I set out, the tires of the station wagon kicking up the fine dust from the dirt road leading into the desert. Everything looked dry and brown. Those birds could really use a drink, I thought, as I drove along. I also thought of the cooperation which was going into this particular installation. This “guz-



zler” as are most, was to be built on public land administered by the Bureau of Land Management. The California Department of Fish and Game, which is responsible for game management and improvement of habitat, had selected the site and would provide supervision. The Bear Valley Sportsman’s Club of Big Bear Lake was providing the labor. Because of this cooperation and this effort, there would be water available for birds and small animals in a spot which previously had none. There would be more chukars, more quail, and more hunter days of exciting upland bird shooting.

The Guzzler

Fish and game people had experimented with providing water for birds and small game in desert areas for many years. They had tried old oil drums, pans, ponds, float valves and tanks. The big problem was evaporation, and none of the early efforts seemed very successful. Then in the 40’s, after World War II, they came up with the design presently in use, referred to variously as a “quail watering device,” “gallinaceous guzzler,” or just plain “guzzler.” It is beautifully simple: all you need is a sloping hillside, a catchment apron, and a storage tank.

By **GORDON W. FLINT**

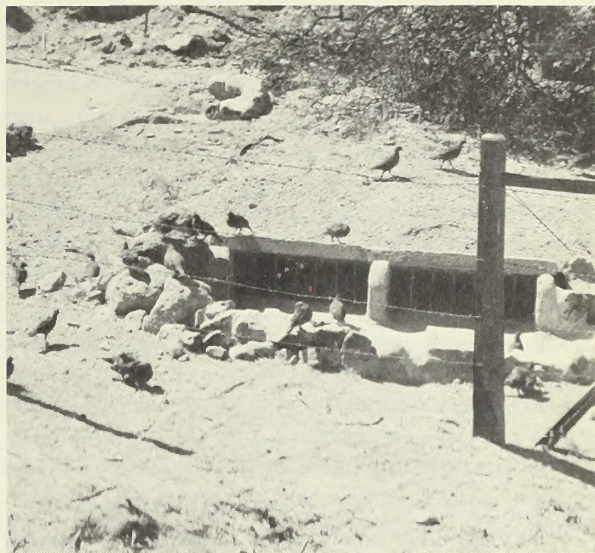
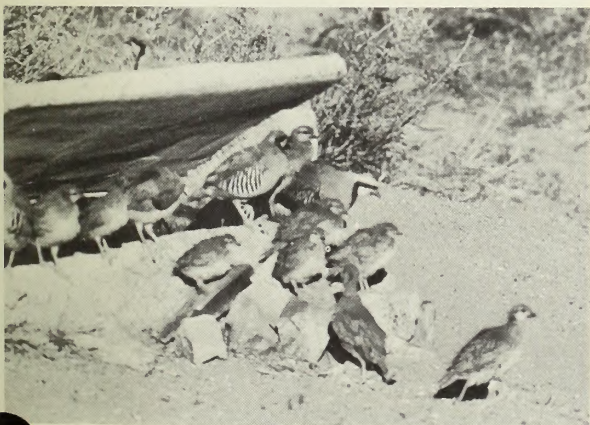
Chief of Public Services
BLM District and Land Office
Riverside, Calif.

The tank is usually of poured concrete, set into the ground. It has a sloping floor, forming a shallow-angled ramp down which the birds can walk through the small, barred opening as the water recedes. The catchment apron, set above the tank, usually covers an area of about 300 square feet. Set completely into the ground, covered with earth, and with an opening only 4 feet wide and 6 inches high, this tank will retain water for weeks, or even months after the infrequent desert rains.

When I arrived at the guzzler site, Jeff was already there, along with a dozen or so members of the Sportsmen's Club who were helping with construction. The tank was already built, having been poured a few days before, and the men were completing work on the apron. Mixing, pouring, and working concrete is hard labor, I know from experience, but these men seemed to be enjoying themselves.

Cost of constructing one of these guzzlers is about \$1,000, according to Jeff, and he reckoned that about 25 percent of that goes for materials, with the remainder representing labor costs. No agency has unlimited funds, and the contribution of labor provided by the San Valley Sportsmen in this case becomes very meaningful to the quail guzzler program operated by the California Fish and Game Department.

Since its inception in the mid 40's, the quail guzzler program has grown from a few test installations to an astonishing total of 1,368 devices in the 10 southern counties of the State. Riverside, San Diego, and San Bernardino counties support the greatest numbers of these, with 384, 363, and 324 respectively. Most of them are on public land administered by BLM.



Birds Flourish

There's no doubt that the simple expedient of providing a watering place for birds has had a tremendous impact on their increasing numbers in the past 25 years. The range of the nesting dove has widened considerably as a result, and the Indian Chukar, introduced in the late 20's, has become established to the point that it now provides an important upland bird harvest, and has since about 1954. The quail have flourished, and are also well established in areas where they could not live formerly.

Maintenance of the guzzlers is a big item now, although new installations are also continuing. And vandalism takes a toll, too. Jeff told me of instances where tank lids had been removed, tanks filled with dirt, and the installations themselves deliberately broken up.

Left by themselves, the guzzlers will last for years, catching and storing the meager desert runoff, and the birds and small animals make good use of this precious, life-giving water. So next time you're in the desert, if you come upon what looks like a small, sloping parking lot, ending at the mouth of a 600 gallon underground tank, leave it! There's a chukar nearby, or a quail, or a pair of doves, and you're standing between them and the drink of water which makes the difference between life and death. □

AS WE CLIMBED out of Red Canyon at the Chocolate Drop, dark clouds were ominously gathering behind us—but we had reached the point of no return and pushed on.

Rains for several days had delayed Range Technician Carl Mahon and myself in carrying out our work schedule in the Red, Paiute, Rainbow, and Blue Canyon areas which compose a large part of the habitat for the few remaining desert bighorn sheep in southern Utah. It is a very wild, rough, isolated land, broken by deep, almost inaccessible canyons and steep, towering cliffs.

The morning had broken clear over south San Juan County, and we decided to make an attempt to get into the area. Larry Farnsworth of the Utah Division of Fish and Game was there and wanted to go with us to obtain information on the few hidden seeps and small springs used by wildlife in this beautiful but desolate country. Since we didn't expect to be gone long, we left our food at the head of Red Canyon.

In a pickup truck we made our way easily from the head of Red Canyon about 15 miles to the Marquis mine. From there on, the very bottom of Red Canyon was the only route because of the sheer cliffs rising for hundreds of feet on either side and the deep, rocky, side canyons. The going was very rough—crossing and recrossing the water channel many times and some-

times traveling down the water course itself for as long as a mile. As a result of recent rains, a stream of red water 8 to 10 inches deep and 7-feet wide was still flowing down our "road."

Chocolate Drop

After driving down the canyon for what seemed hours, we started to climb out at the formation known as the Chocolate Drop. We drove part way up the south face of the Chocolate Drop, and then swung around the side and over a little pass into the Blue Canyon area. We worked our way along the treacherous track into the wild and rugged Rainbow and Paiute Canyons, the very heart of the bighorn country.

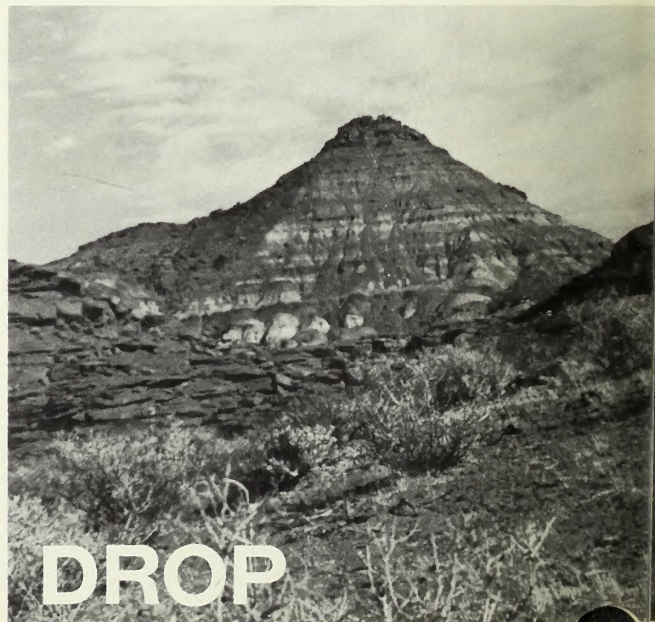
We made our observations and, hurrying before darkening clouds, were traveling back to Blue Canyon when it started raining. The lightning and thunder were nerve-shattering. We knew we had to move fast, that we might be in for a rough time. In this kind of country—barren, rocky, sparse vegetation—water runoff is so rapid that flash floods are common.

The blue clay quickly became slick and gummy, making it difficult to maneuver the pickup truck and to stay on the narrow track. To keep from slipping off the side into a deep and rocky canyon, two of us walked alongside the truck in the rain and pushed it toward the inside of the track.

Six minutes from disaster

**I'LL NEVER
FORGET
CHOCOLATE**

Chocolate Drop



By **ALBERT HARRIS**

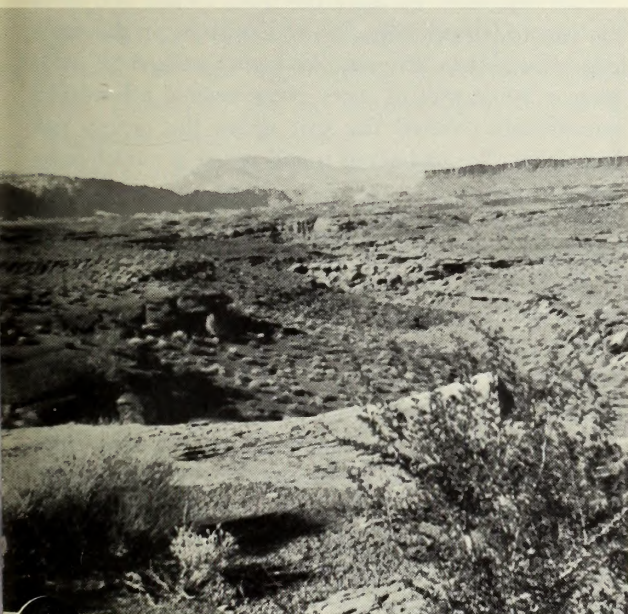
Realty Specialist
BLM District Office, Monticello, Utah

At one point we became aware of a loud roar. We looked up and saw many waterfalls leaping off the top of the rock formations. The source of the roar was one tremendous waterfall leaping out and down for 500 feet where, striking the slick rock, it sprayed upward again in a panorama of what looked like chocolate milk.

There was nothing on top of the Wingate formations to hold the water back, so it poured over the rims in countless waterfalls. In one spot, the rushing water caused the face of the cliff to break loose, and thousands of tons of rock crashed down in a huge cloud of red dust that billowed high into the air despite the rain.

We knew that nothing would hold the gathering water back and that we must reach our crossing in Blue Canyon before it flooded too deep for our vehicle. But the slick, heavy, gummy clay made progress agonizingly slow. The water had to travel further than we did, but we knew it was traveling much faster, unimpeded, uprooting cedars and pinons, moving large rocks and anything else in its way.

We hiked out . . . five exhausting hours through country like this.



"No Choice"

When we reached the Blue Canyon crossing, we found a stream of water already 14 inches deep and 25 feet wide. Carl wondered if we could make it. "No choice," I said, "we've got to try." To get out of there we had to beat the flood that was sure to come at any minute,

About halfway across, water splashed up on the distributor cap, soaked the wires and killed the engine. We were stalled in the middle of the stream with a flood bearing down on us.

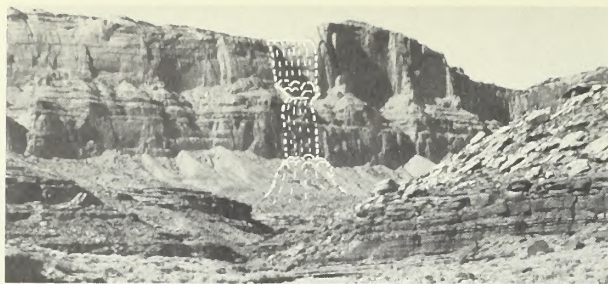
I pulled off my boots and socks and, with the water swirling around my knees, waded around to raise the hood to try to dry the wires with tissue paper. But the whole engine was soaked, and we had no time to lose. We decided to have Carl grind the vehicle across and up on high ground by using the starter. He did, while I waded ahead to move larger rocks out of the way.

We just barely got onto high ground when a 4-foot wall of water came rushing by and went grinding and roaring on down the canyon. The water continued to rise rapidly, but I finally dried the wires enough to get the engine started. After a great deal of shoveling, pushing, and sweating, we wound our way at last up the narrow clay dugway and out of the Blue Canyon drainage. Flood waters were roaring down the canyon behind us, but we were soon to learn that what we had experienced there was nothing to what awaited us in Red Canyon.

As we worked our way around the Chocolate Drop and started down its south face, we could actually smell the flood in Red Canyon. We had been hearing it for some time.

We drove out on one point where we looked down into Red Canyon and beheld a spectacular view: roaring, plunging sand and debris-laden torrents of water 10 to 14 feet deep, and even much deeper where the red waters leaped wildly in huge white-capped waves. We were watching a once-in-a-lifetime spectacle.

The rain had stopped briefly, and shortly before we reached Red Canyon the flood had crested. Now the water was beginning to recede, and as we sat and marveled at the spectacle before us, the sun broke through the dark clouds to the west, just above the horizon. For a few minutes the flood water and surrounding cliffs glowed an eerie red. But darkness was coming quickly, and we needed to find a place to spend the night.



Flood waters poured over this rim in countless waterfalls, the largest at the point indicated.



The pickup was stuck at this point in Red Canyon. When the flood crested as indicated, the truck would have been submerged.

No Food

We found an abandoned mine tunnel, and in it a few pieces of dry wood for a fire. We had had no food all day except for a can of vienna sausage about noon. We had a half gallon of water. We don't carry jackets in this country in the middle of summer so we didn't have any protection from the cool, damp wind. But we did have some thin plastic garbage can liners. We made holes in the bottoms for our heads and wore them for the night.

For breakfast we had a drink of water.

In Red Canyon the water level was about where it had been the previous morning, but with drastic changes in location and negotiability. Dark clouds already were gathering again at the head of the canyon. We knew if we were going to get out soon, we had to start now.

Picking our way, we made the first three or four crossings safely and were progressing up the canyon nicely. But at the next crossing the water was deeper than usual and it splashed up on the wires and killed the engine. As soon as we lost our momentum we were stuck.

The water was about a foot deep, running pretty fast and the sand was shifting rapidly under us. The pickup settled into the sand and the only way we could get out was by repeatedly jacking up the wheels, putting rocks under them and shoveling. This we did for 6½ hours, wading in water up to our knees all the time. We measured our progress in inches.

We felt like giving up. The jack handle had broken . . . the water was rising and running into the pickup under the doors . . . the engine was soaked again . . . my feet were cut and bleeding . . . we were weak from hunger. It seemed impossible to save the vehicle, so we removed our equipment and papers to high ground and sat down to rest, expecting another flood at any second because it was again raining hard.

One More Time

Finally I said, "Let's give it one more try; we may still have time."

Back into the water we went. We laboriously jacked up the front end and put large flat rocks under the wheels to raise the fan out of the water to keep it from throwing water onto the wires and drowning the engine again. We had no wrench or we would have taken off the fan belt as an emergency measure. We wrapped a plastic bag over the distributor to try to keep it dry, and laid more large flat stones behind the rear wheels.

Once more we got the car started and, with pushing, I gave it the gun. With lots of body English and even greater good fortune we finally were successful in getting it out of the water and up onto high ground on the north side of the stream.

Carl suggested we leave the truck locked and cross the stream immediately, for we had to be on the south side to be able to hike out. We hadn't walked 30 yards when a 5-foot wall of water swept around a bend and immediately covered the spot where the pickup had been stuck. We had saved it and possibly ourselves by about 6 minutes.

We hiked out, slipping and sliding through mud and water, struggling over rocks and cliffs. Five exhausting hours later we reached the Marquis mine, where we had our first food after a long fast—another can of vienna sausage and a can of pop. It was delicious.

Larry had gone for help soon after the truck had become stuck. About 7 p.m. he reached the mine with a National Park Service ranger in a pickup who drove us to the headquarters of Natural Bridges Monument.

After 40 grueling hours our journey at last was ended, leaving us tired, muddy, hungry—and rather certain, too, that one once-in-a-lifetime experience such as ours is enough for anybody. □



LAND LAW REPORT

The following news notes, compiled by the Public Land Law Review Commission, report the progress to date of the Commission's work.

Commission Study on Schedule

The Commission will complete its work on schedule by June 30, 1970, Representative Wayne N. Aspinall reports. The Commission Chairman reminded members of the National Western Mining Conference on February 1 that "it was never anticipated that the Commission would recommend specific pieces of legislation" but would submit policy guidelines to Congress. "It will be up to Congress to determine the precise means of implementing the Commission's recommendations," he said.

Commission Director Milton A. Pearl also addressed the conference, reporting on the Commission's meeting plans for 1969 and its progress to date.

Two Professional Appointments Announced

Milton A. Pearl, Commission Director, has announced two new appointments to the professional staff: Thomas C. Lee, an attorney; and Thomas R. Waggener, resource economist.

Lee, a native of Michigan, was an attorney with the Common Carrier Bureau of the Federal Communications Commission before joining the Commission staff. Waggener is serving with the Commission on leave of absence from the University of Washington where he was assistant professor of forest economics and assistant director of the University's Institute of Forest Products.

Commission Holds February Meeting With Advisors

The Commission met with its Advisory Council and Governors' Representatives on February 21 and 22 in Washington, D.C. to discuss policies involved in the use of the Outer Continental Shelf and administrative procedures of Federal Departments and Agencies.

This was the second meeting of the Commission with its advisors in which vital public land issues were aired. The first meeting was held in Tucson, Ariz., on November 8 and 9, 1968, when discussions were held on the subjects of Revenue Sharing and In-Lieu Payments, and Withdrawals and Reservations. Subsequently, the Commission met in executive session on November 10 in Tucson and on January 24 and 25 in Washington, D.C. for the purpose of preparing tentative recommendations regarding the two subjects. The Commission also met in executive session following the meeting on February 21.

Study Begun on Use and Occupancy of Public Lands

The firm of Daniel, Mann, Johnson and Mendenhall of Los Angeles, Calif. has been awarded a contract by the Commission for a study of "Federal Public Land Laws and Policies Relating to Use and Occupancy." The study will be completed by June 30, 1969, at a price not to exceed \$116,000. The review will cover the spatial uses of public lands, as distinguished from the resource uses that are covered in other Commission studies.

As part of the Use and Occupancy study, seven towns and cities of the West have been chosen for a case study of the demand for public lands for urban use. They are Salt Lake City, Utah; Reno, Nev.; Aspen, Colo.; Alamogordo, N. Mex.; Flagstaff, Ariz.; South Tahoe, Calif.; and Richland, Wash.

PUBLIC SALE BULLETIN BOARD

This is a compilation of the most up-to-date information possible on up-coming sales of public lands by land offices of the Bureau of Land Management. For details of land descriptions, prices, and other information pertinent to sales, you must write the individual land office concerned. In most cases, there are adjoining landowners who have statutory preference rights and may wish to exercise them to buy the land. Sales notices will point out, insofar as possible, problems relating to (1) access, (2) adjoining owner preference rights, (3) small-tract sales limitation of one per customer, and other pertinent information. When possible, all sales are scheduled far enough in advance so ample notice can be given in Our Public Lands. Sales listed can be canceled on short notice for administrative and technical reasons. A listing of BLM land offices with addresses is found on the opposite page.

Key: A, acres; app, appraised; el, elevation; est val, estimated value; cty, county; veg, vegetation; pot, potential; pub, publication cost; elec, electricity; tel, telephone; hwy, highway; US, United States.

ARIZONA

3.75 A, 16 miles east of Tombstone in ghost town of Gleeson, Cochise Cty. El 4,900 ft. Good dirt roads from Tombstone, Bisbee, and Pearce. Moderately rolling. Rights-of-way reserved to US. App \$562 plus pub \$34.31.

40.96 A, 5 miles southwest of Apache, Cochise Cty. El 4,600 ft. Access by US Hwy 80. Rights-of-way reserved to US. Level to gently rolling; drainage into upper San Simon Valley. App \$1,880 plus pub \$50.

72.04 A, 1/2 mile west of Mayor, Yavapai Cty. El 4,500 ft. Access by ungraded abandoned railroad roadbed. Flat; veg is manzanita, catclaw, prickly pear. App \$16,200 plus pub \$66.50

40 A, 1 mile southwest of Humboldt, 19 miles east-southeast of Prescott. El 4,600 ft. Access by ranch road from Black Canyon Hwy (State Hwy 69). Nonagricultural, nontimbered grassland with sparse juniper and oak brush growth. Annual rainfall averages 13 inches. Area dependent on lumbering, mining, ranching, farming. Tel and elec. Water could be obtained by drilling well. App \$8,000 plus pub \$55.10.

160 A, 12 miles west of Tombstone, Cochise Cty. El 4,100 ft. Access by ranch road on private land from State Hwy 82 to within 1/2 mile of tract, then via 4-wheel drive. No utilities; nearest powerline 1 1/2 miles south along Hwy 82. App \$7,200 plus pub \$30.61

2 tracts, 26.05 A, 11.58 A, 18 miles southwest of Tombstone, Cochise Cty. El 4,600 ft. Joined on west by Fort Huachuca Military Reservation. Sold separately; not joined. No access, utilities. Flat to gently rolling. App \$7,550 plus pub \$25.20 and \$3,350 plus pub \$25.20.

CALIFORNIA

2 isolated tracts, 40 A each, 7 air miles west of Angels Camp, Calaveras Cty. No legal access. Rough terrain; veg is brush, scattered digger pine and native grasses; no water. App \$4,900 for both.

2 isolated tracts, 40 A each, 7 miles southwest of Arbuckle, Colusa Cty. Steep and hilly terrain. Red clay loam soil, no water. App \$3,600 for both.

4 small tracts, 6 miles west of Georgetown, El Dorado Cty. No legal access. Brush and tree cover, some grass, no water. App from \$20 to \$1,990.

3 small tracts, 6 miles southwest of Redding, Shasta Cty. have creek frontage. Utilities, school near. Write Sacramento Land Office for cost and other details.

COLORADO

29 tracts, 14.25 A to 320 A, Larimer Cty. Moderately rolling to rough; grazing pot. Two tracts join national forests; one corners on graded and maintained road; others have no access. Two have permanent streams; one crossed by intermittent stream with seeps and springs. App \$155 to \$6,250.

MONTANA

4 isolated tracts: 2 40 A each, 80.64 A, and 37.51 A, 25 miles southwest of Birney, Big Horn Cty. Gently to moderately rolling. Shale loam soil. Veg is grass, shrubs, scattered ponderosa pine. One tract has cty road access, one has private ranch trail access; no access for other two. 40 A tracts app \$800 each; 80.64 A app \$1,450; 37.51 A app \$675, plus pub.

4 isolated tracts: 3 40 A each, one 80 A, 20 miles northeast of Winifred, Fergus Cty. Hilly, steep to rolling. No agricultural pot. No stockwater. 40 A tracts app \$580 each; 80 A app \$1,160 plus pub.

160 A, 8 miles south and east of Clyde Park, Park Cty. Grazing pot. Rolling mountain foothills. No agricultural pot; no range improvements. No public access. App \$5,600 plus pub.

6 isolated tracts, 80 A to 640 A southeast of Colstrip, Rosebud Cty. Isolated; grazing pot. Gently rolling to extremely steep and rugged. Shale loam soil, with sands, silts clays. Veg is grass with few shrubs. No stockwater. App \$18.50 to \$22.50 per A, plus pub.

40 A, 2 miles south of Birney, Rosebud Cty. Grazing pot; steep and rough. Shallow clay and sandy soils, sandstone outcrop. Veg is sparse grasses, shrubs, dense clumps of juniper and pine. No public access, no stockwater. App \$340 plus pub.

NEVADA

40 A, 10 miles north of Ely, White Pine Cty. El 6,200 ft. Flat; agricultural pot. Access via improved dirt road. Elec, tel nearby. Zoned for open land use. App \$1,300. Sale April 22.

5 A, 5 miles south of downtown Las Vegas, 1 mile west of the "Strip." Fronts on Tropicana Avenue, improved paved road. Zoning is residence-estates. Level, slightly humocky. App \$30,000. Sale May 7.

2 tracts, 7.5 A and 10 A, in Jackpot, near Idaho border. Legal access. Utilities available. Residential development pot. App \$2,050 and \$2,750. Sale June 11.

2 tracts, 640 A each, 12 miles northeast of Elko. First rolling, second is level. Deep loam soil. Elec, tel within 2 miles. 3 miles from Interstate Hwy 80. Rural residential subdivision pot. App \$19,200 and \$22,400. Sale April 30.

40 A, 7 miles northwest of Moapa, Clark Cty. Rough to rolling, on hill overlooking Moapa Valley. Good road access. Elec nearby. Residential development pot. App \$3,000. Sale April 30.

560 A, 9 miles north of Pahrump. Access by 4-wheel vehicle. No utilities. Rough, rocky, with moderate to deep washes. El varies from 3,000 to 3,800 ft. App \$24,220. Sale April 30.

NEW MEXICO

3 tracts, 2 40 A each, one 160 A, 25 miles southeast of Gallup and 2 miles west of Village of Ramah. Rolling to rough, steep canyon-juniper grazing land. Elec. near. One tract has frontage on State Road 53. 40 A tracts app \$675 and \$900; 160 A app \$1,575.

44.38 A, 3 miles southwest of Aztec, 4 miles northeast of Farmington, 1/2 mile south of San Juan River. Rolling grazing land; juniper, grass, sagebrush. Access from paved state road over a gas well service road. Gas and elec near. App \$1,550.

OREGON

2 tracts, 40 and 69 A, 20 miles east of Klamath Falls. Grazing, limited agricultural pot. Level to rolling, no legal access. Semi-arid climate. Veg is sagebrush, native grasses, juniper. App \$480, \$1,480.

UTAH

2 tracts, 238.43 A, 120 A. First is 1 mile north, second 1/2 mile east of Glendale, Kane Cty. First has no public road access, second intersected by public road. Rough; grazing pot. Coal, oil, gas (also ditches and canals) reserved to US. App \$13,100 and \$6,600.

320 A, 16 miles northwest of Tremonton, Box Elder Cty. In foothills of West Mountains. No public road access. Rough;

grazing pot. Oil and gas and ditches and canals reserved to US. App \$4,800.

2 tracts, 320 A and 392.96 A, 10 miles southwest of Snowville, Box Elder Cty. No public road access. Rough and steep, shallow soils. No agricultural pot. Oil and gas and ditches and canals reserved to US. App \$3,800 and \$4,700.

WASHINGTON

2 tracts, 200 A and 315 A, 4 miles north of Rock Island in central Washington. Rough, steep, mountain hillside; talus slopes, some thin soil. El ranges 1,760 to 3,060 feet. Very sparse veg, suitable for limited grazing use. No water; powerlines 1/2 mile. App \$10-\$15 per A.

WYOMING

3 tracts totalling 240 A, 35 miles northeast of Rock River. Two have legal access by Cty Road 721. Third has no legal access. Grazing pot; undulating to rolling. App \$2,880, \$720, and \$720.

Bureau of Land Management Land Offices

ALASKA:

555 Cordova St.
Anchorage, Alaska 99501
516 Second Ave.
Fairbanks, Alaska 99701

ARIZONA:

Federal Bldg., Room 204
Phoenix, Ariz. 85025

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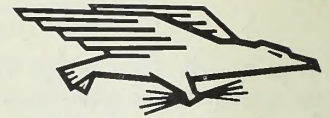
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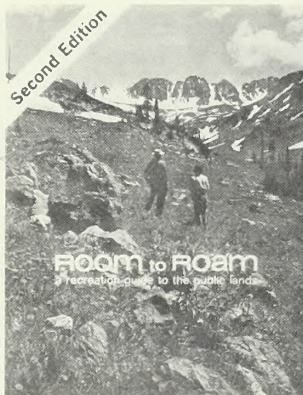
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